

CHAIR MOUNTED PLATFORM ASSEMBLY

FIELD OF THE INVENTION

[0001] This invention relates to an accessory for computer peripheral devices. More particularly, it relates to a platform assembly mountable to a chair for use in
5 operating a peripheral device, for example, a computer mouse.

BACKGROUND

[0002] The use of personal computers has dramatically increased over the past two decades. With increased usage comes an increase in personal injuries due to incorrect or awkward seating positions assumed by a computer user at a computer
10 workstation. Prolonged computer use in an awkward position can lead to back, neck, shoulder and arm strain.

[0003] Typically, a workstation consists of a desk where a computer and its peripheral devices reside and a desk chair providing seating for a computer user. One approach for solving incorrect seating positions is to relocate the peripheral
15 devices essential to the operation of the computer to the desk chair from the desktop. This allows a computer user to assume a more correct posture in their chair rather than leaning over a desk.

[0004] Several platforms have been developed throughout the years with this solution in mind. For example, Kelly, US Patent 6,123,387 describes a chair with both
20 keyboard and mouse platforms. However, these platforms are bolted to the chair making their removal impractical when needed. Also, the mouse pad does not appear to be adjustable.

[0005] Adkins United States patent 6,027,165 describes a table attachment for armchairs. This table is somewhat cumbersome in the manner that it is also bolted to
25 the chair rendering attachment and removal somewhat time consuming. In addition, there appears to be limited adjustability of the table itself.

[0006] Bourassa United States patent 5,848,773 describes a mouse pad support pedestal consisting of a clamp device for attaching the apparatus to a chair. The clamp is secured to the arm of a chair by tightening a wing nut on a threaded bolt until secure. The support pedestal sits in a groove in the upper portion of the clamp
5 and can only be moved along one axis.

[0007] Nauth Canadian patent application 2,279,333 describes an articulating mouse pad that uses an arm with ball and socket joints for adjustability. This design allows for greater adjustability but requires the loosening of an adjusting screw to allow free movement of the ball and socket joints.

10 [0008] The present invention is concerned with a chair mounted platform assembly that easily attaches to a chair while allowing for maximum adjustability of the platform while employing a minimum number of parts and user adjustment elements.

SUMMARY

15 [0009] According to the present invention there is provided a platform assembly for attachment to a chair comprising:

a platform to support a computer peripheral device;

a flexible support arm;

20 a first coupling connecting the platform to one end of the flexible support arm; and

a second coupling for connecting the other end of the flexible support arm to a chair.

[00010] Preferably, the flexible support arm includes an elongate member of ductile material. This may be a foam tube with a flexible metal cable core and a
25 corrugated plastic sheath. This allows infinite adjustment of the assembly within a range of positions. The use of this support arm configuration provides an inexpensive

and simple method of overcoming the adjustability problems of the prior art.

[00011] The second coupling is desirably a spring loaded clamp. Such a clamp allows for quick attachment of the platform to the chair and quick release of the platform from the chair when not needed.

5 **[00012]** The first coupling may be an adjustable clamp for securing the support arm to the platform at a position that is adjustable along the platform

[00013] An alternative support arm construction is a flexible metal conduit.

[00014] The platform assembly may also include a moulded handgrip for ergonomic adjustment of the platform. This is particularly useful with the metal
10 support arm.

BRIEF DESCRIPTION OF THE DRAWINGS

[00015] In the accompanying drawings, which illustrate an exemplary embodiment of the present invention:

Figure 1 depicts one embodiment of the platform assembly attached to
15 the armrest of an office chair;

Figure 2 is an enlargement of the first coupling connecting the platform to the support arm in the embodiment of Figure 1;

Figure 3 is a bottom view of the platform in the embodiment of Figure 1;

Figure 4 is a plan view of the platform assembly;

20 Figure 5 is a plan view of the second coupling;

Figure 6 is a side view of the second coupling;

Figure 7 is a side elevation, partially broken away, of a second embodiment of the platform assembly;

Figure 8 is a bottom view of the platform of Figure 7;

25 Figure 9 is a bottom view of the platform in the second embodiment; and

Figure 10 is a view along line X-X of Figure 8.

DETAILED DESCRIPTION

[00016] Referring to the accompanying drawings, Figures 1, 2 and 3 illustrate a first embodiment of chair mounted platform assembly 10 attached to a commercially available office chair 11. The office chair 11 includes a seat 12, a backrest 13, armrests 14, a pedestal 15 and radiating legs 16 supported by castors 17. The mouse pad 10 consists of a platform 18, a first coupling 19 connecting the platform to a handgrip 20, a flexible support arm 21 and a second coupling 22 connecting the flexible support arm to one of the armrests 14 of the office chair.

[00017] The first coupling 19 is comprised of a fastening knob 31 and a threaded bolt 32. The threaded bolt 32 is secured to the handgrip 20 by screwing into a bore in the handgrip. The fastening knob has a similar bore that allows it to be threaded onto the threaded bolt. The head of the threaded bolt sits in a channel created by two parallel rails 33 that are fastened to the underside of the platform 18 with screws 34. The fastening knob 31 is turned until the knob and the head of the bolt pinch the railings creating enough tension to immobilize the platform 18. Loosening and tightening the fastening knob allows rotation of the platform around the threaded bolt and movement along the rails 33.

[00018] The handgrip 20, as shown in Figure 1, is shaped to conform to the user's hand, extending through an angle from the support arm to the first coupling, with ridges to define finger grips so that the whole can be used as a pistol grip for orienting and positioning the platform as desired.

[00019] The flexible support arm 21 includes a section of a commercially available flexible metal conduit of the type formed from a helically wound continuous metal strip. The support arm is shapable allowing infinite adjustment of the platform assembly within a range limited by the bending radius of the arm. The arm is also rigid enough that once adjusted the platform will remain in position under the applied

loads until readjusting is desired. One end of the arm 21 fits into a hollow in the handgrip 20. The other end of the flexible shaft is attached to the second coupling 22.

[00020] The second coupling 22 is a spring loaded clamp. The clamp consists of two clamp arms 51, a pivot pin 52, a torsion spring 53, and two resilient pads 54.

5 Referring to Figure 5, the two clamp arms are held together by the pivot pin. The torsion spring ends 55 bear on the clamp arms providing the necessary force for the operation of the clamp. The resilient pads 54 prevent marring the finish of the chair's armrest 14. The spring clamp provides for easy attachment and release of the platform assembly to and from the chair.

10 **[00021]** In Figure 4, there is a top-down view of the platform 18. The surface 41 is recessed to accommodate a textured surface for operation of the computer peripheral device. In addition, the platform includes a wrist-supporting pad 40 in an effort to maintain ergonomic functionality.

[00022] The handgrip 20, as shown in Figure 1, is shaped to conform to the
15 user's hand, extending through an angle from the support arm to the first coupling, with ridges to define finger grips so that the whole can be used as a pistol grip for orienting and positioning the platform as desired.

[00023] The flexible support arm 21 includes a section of a commercially
20 available flexible metal conduit of the type formed from a helically wound continuous metal strip. The support arm is deformable and can be shaped as desired, allowing infinite adjustment of the platform assembly within a range limited by the bending radius of the arm. The arm is also rigid enough that once adjusted the platform will remain in position under the applied loads until readjusting is desired. One end of the arm 21 fits into a hollow in the handgrip 20. The other end of the flexible shaft is
25 attached to the second coupling 22.

[00024] Figures 7 through 10 illustrate a second embodiment of the assembly

with modified support arm and first coupling configurations. In this embodiment, the platform assembly 60 includes the platform 18, a first coupling 62 connecting the platform to a flexible support arm 64 and the second coupling 22 connecting the flexible support arm to one of the armrests 14 of the office chair.

5 **[00025]** The first coupling 62 includes an inverted T rail 66 on the bottom side 68 of the platform 18. and a channel 70 engaging the rail and mounted on the end of the handgrip 20. The bottom side of the rail 66 has one side formed as a rack 72, with a set of teeth 74. Beside the rack is a relieved section 76. A transverse pin 78 extends across the channel 70, below the rail. The pin extends beyond one side of the rail
10 and has a head 80 on that end. An internal spring 81 biases the pin outwardly. Pin 78 carries a block 82, with teeth 84 on its upper side, configured to engage the teeth 74 of the rack 72 when the pin is displaced outwardly from the one side of the channel by the spring 81, thus locking the rail 66 and the platform to the handgrip 20. Pressing on the pin head 80 to move the pin 78 inwardly disengages the teeth 84
15 from the rack 72, allowing the channel 70 to slide along the rail 66 to adjust the platform position on the handgrip.

[00026] The flexible support arm 64 includes a section of thick walled foam tube 86 with a wound steel cable core 88 and a corrugated plastic sheath 90. The support arm may be deformed to allow infinite adjustment of the platform assembly within a
20 range limited by the reach and bending radius of the arm. The arm is also stiff enough that the platform, once adjusted, will remain in position under the applied loads until readjustment is desired. One end of the arm 64 is shaped to form the handgrip 20. The other end of the flexible shaft is attached to the second coupling 22.

[00027] While particular embodiments of the present invention have been
25 described in the foregoing, it is to be understood that other embodiments are possible within the scope of the invention. Thus, for example, the platform assembly could

comprise a flexible support arm of various forms, including an arm formed entirely of plastic material or of the type described in US Patents 5,517,392 and 5,521,803. The adjustment mechanism for adjusting the position of the platform on the arm may use an internal ball detent rather than the clamp or latch mechanisms described. Instead
5 of the armchair used in the exemplary embodiment, the platform assembly could be mounted to an armchair having an armrest with center support post. The invention is therefore to be considered limited solely by the scope of the appended claims.